

High Current Power MOSFET

	V_{DSS}	I_{D25}	$R_{DS(on)}$
IXTN 58N50	500 V	58 A	85 mΩ
IXTN 61N50	500 V	61 A	75 mΩ

N-Channel Enhancement Mode



Preliminary Data

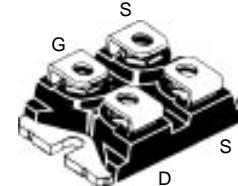
Symbol	Test Conditions	Maximum Ratings		
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	500	V	
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1.0 \text{ M}\Omega$	500	V	
V_{GS}	Continuous	± 20	V	
V_{GSM}	Transient	± 30	V	
I_{D25}	$T_c = 25^\circ\text{C}$	IXTN 58N50 IXTN 61N50	58 61	A
I_{DM}	$T_c = 25^\circ\text{C}$ Pulse width limited by T_{JM}	IXTN 58N50 IXTN 61N50	232 244	A
P_D	$T_c = 25^\circ\text{C}$	625		W
T_J		-40 ... +150		°C
T_{JM}		150		°C
T_{stg}		-40 ... +150		°C
V_{ISOL}	50/60 Hz, RMS	$t = 1 \text{ minute}$	2500	V~
		$t = 1 \text{ s}$	3000	V~
M_d	Mounting torque	1.5/13 Nm/lb.in.		
	Terminal connection torque (M4)	1.5/13 Nm/lb.in.		
Weight		30		g

Symbol	Test Conditions	Characteristic Values		
		($T_J = 25^\circ\text{C}$ unless otherwise specified)		
		Min.	Typ.	Max.
V_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 5 \text{ mA}$	500		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 12 \text{ mA}$	1.7		V
I_{GSS}	$V_{GS} = \pm 20 \text{ V DC}$, $V_{DS} = 0$		± 200	nA
I_{DSS}	$V_{DS} = 0.8 V_{DSS}$ $V_{GS} = 0 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		$500 \mu\text{A}$ 2 mA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 0.5 I_{D25}$	58N50 61N50		$85 \text{ m}\Omega$ 75 mΩ
	Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $\leq 2 \%$			

miniBLOC, SOT-227 B



E153432



G = Gate

S = Source

Either Source terminal at miniBLOC can be used as Main or Kelvin Source

Features

- International standard package
- Isolation voltage 3000V (RMS)
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Low drain-to-case capacitance (<100 pF)
 - reduced RFI
- Low package inductance (< 10 nH)
 - easy to drive and to protect
- Aluminium Nitride Isolation
 - increased current ratings

Applications

- DC choppers
- AC motor speed controls
- DC servo and robot drives
- Uninterruptible power supplies (UPS)
- Switched mode and resonant mode power supplies

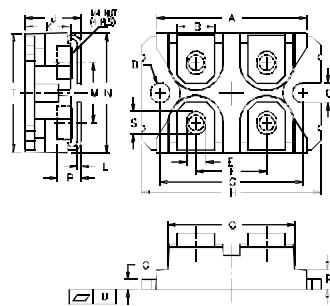
Advantages

- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 10$ V; $I_D = 0.5 I_{D25}$, pulse test	20	30	S
C_{iss} C_{oss} C_{rss}	$V_{GS} = 0$ V, $V_{DS} = 25$ V, $f = 1$ MHz	11000	pF	
		1550	pF	
		225	pF	
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10$ V, $V_{DS} = 0.5 V_{DSS}$, $I_D = 50$ A $R_G = 1 \Omega$ (External)	30	ns	
		60	ns	
		100	ns	
		50	ns	
Q_g Q_{gs} Q_{gd}	$V_{GS} = 10$ V, $V_{DS} = 0.5 V_{DSS}$, $I_D = I_{D2}$	420	nC	
		55	nC	
		160	nC	
R_{thJC}			0.20	K/W
R_{thCK}		0.05		K/W

Source-Drain Diode
Ratings and Characteristics
 $(T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Test Conditions	Min.	Typ.	Max.
I_s	$V_{GS} = 0$ V		61	A
I_{SM}	Repetitive; pulse width limited by T_{JM}		244	A
V_{SD}	$I_F = I_s$, $V_{GS} = 0$ V, Pulse test, $t \leq 300$ μs , duty cycle ≤ 2 %		1.5	V
t_{rr}	$I_F = 50$ A, $di/dt = -100$ A/ μs , $V_R = 100$ V		800	ns

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M4 screws (4x) supplied

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	38.00	38.23	1.496	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004